



AXCEND FOCUS LC

Clarity Control Module

ENG

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To facilitate the orientation in the **Axcend Focus LC** manual and **Clarity** chromatography station, different fonts are used throughout the manual. Meanings of these fonts are:

Open File (italics) describes the commands and names of fields in **Clarity**, parameters that can be entered into them or a window or dialog name.

WORK1 (capitals) indicates the name of the file and/or directory.

ACTIVE (capital italics) marks the state of the station or its part.

Chromatogram (blue underlined) marks clickable links referring to related chapters.

The bold text is sometimes also used for important parts of the text and the name of the **Clarity** station. Moreover, some sections are written in format other than normal text. These sections are formatted as follows:

Note: Notifies the reader of relevant information.

Caution: Warns the user of possibly dangerous or very important information.

I Marks the problem statement or trouble question.

Description: Presents more detailed information on the problem, describes its causes, etc.

Solution: Marks the response to the question, presents a procedure how to remove it.

1 Axcend Focus LC

This manual describes the use of the **Focus LC**, a portable HPLC device, with the **Clarity**.



Fig. 1: Axcend Focus LC System

The control module enables direct control of the instrument over Local Area Network (LAN). Direct control means that the instrument can be completely controlled from the Clarity environment. The Instrument method controlling the analysis conditions will be saved in the measured chromatograms.

2 Requirements

2.1 Software requirements

Clarity (p/n C50) installation with **LC control** module (p/n A24).

Agilent ICF and **Axcend Focus LC** require **Microsoft .NET version 4.8** or higher for correct installation and operation. This version is already installed on majority of PCs. Nonetheless you will be notified during the installation if your PC is missing any version of **Microsoft .NET** - then follow the instructions there. For complete list of .NET requirements, see the **.NET Framework System Requirements** on Microsoft web page.

Supported operating systems:

- **Windows 10 (64 bit)**
- **Windows 11 (64 bit)**

Note: Before installing **Clarity**, it is recommended that your **Windows** is updated to the latest version.

2.2 Hardware requirements

- Version of firmware must be compatible with the **Agilent ICF** installed with **Clarity**.
- LAN interface installed on PC is required.

3 Installation procedure

Axcend Focus LC is not part of the **Clarity Typical** installation. To install it, select the **Full** installation or **Custom** installation with **Axcend Focus LC** option selected.

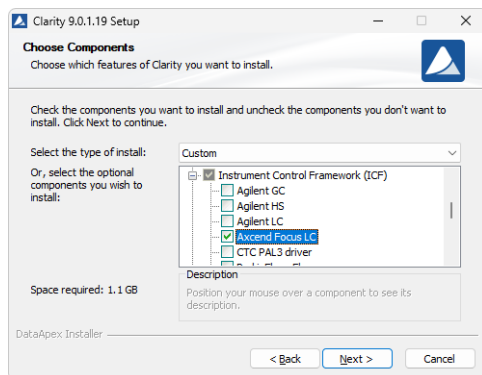


Fig. 2: Custom installation of Clarity

3.1 Installing Correct Version of Agilent ICF

Clarity expects a specific version of Agilent ICF. Because other programs may also be using Agilent ICF, it is possible they've installed a different version than is supported by Clarity. In that case in the installation you will be prompted to reinstall it in order to install correct version. Going forward with this step is crucial for correct functionality of Clarity and Agilent ICF.

This situation may also occur during Clarity update when the new version contains updated ICF version.

Note: This reinstallation of Agilent ICF may cause that other programs using it, may not function properly.

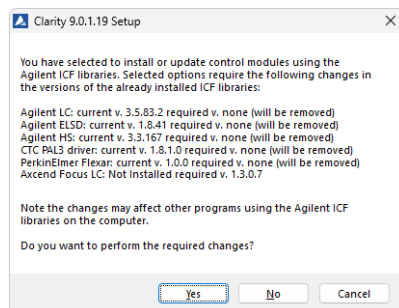


Fig. 3: Installing correct version of Agilent ICF

3.2 Network connections

The instruments supported by **Agilent ICF** has to be connected to a site network by LAN. It is recommended to attach the hardware directly to the PC avoiding hubs, switches etc. When using a switch or a hub, multiple hardware can be connected to one PC. Always contact your local LAN administrator who can make the appropriate settings.

Caution: **Cross LAN** cable is primarily used for the direct connection of the instrument and the PC. This cable can also be used for the connection of the device to the switch or network socket, but with older switches, the **straight LAN** cable might be necessary.

LAN Settings

PC: LAN card, TCP/IP protocol.

Both PC and **Axcend Focus LC** hardware should be configured on the same IP range.

Firewall

Ensure that the firewall does not block communication from the **Axcend Focus LC** hardware.

3.3 Clarity Configuration

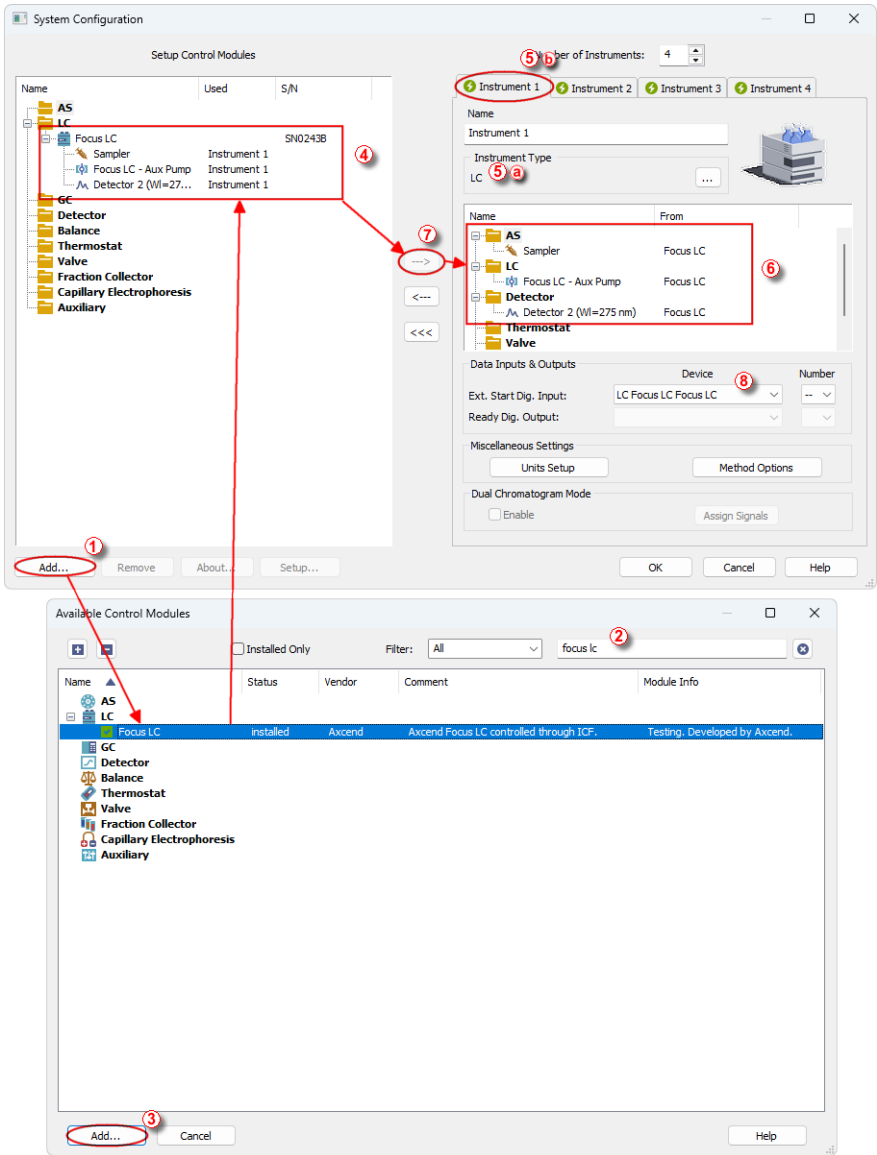


Fig. 4: System Configuration

Caution: Before you start **Clarity**, ensure there is not any other application active and controlling the instruments.

- Start the **Clarity** station by clicking on the  icon on the desktop.
- Invoke the **System Configuration** dialog accessible from the **Clarity** window using the *System - Configuration...* command.
- Press the **Add** button ① (See **Fig. 4** on pg. 5.) to invoke the **Available Control Modules** dialog.
- You can specify the searching filter ② to simplify the finding of the driver.
- Select the **Focus LC** item from the **LC** section and press the **Add** ③ button.

The **ICF Setup** dialog will appear.

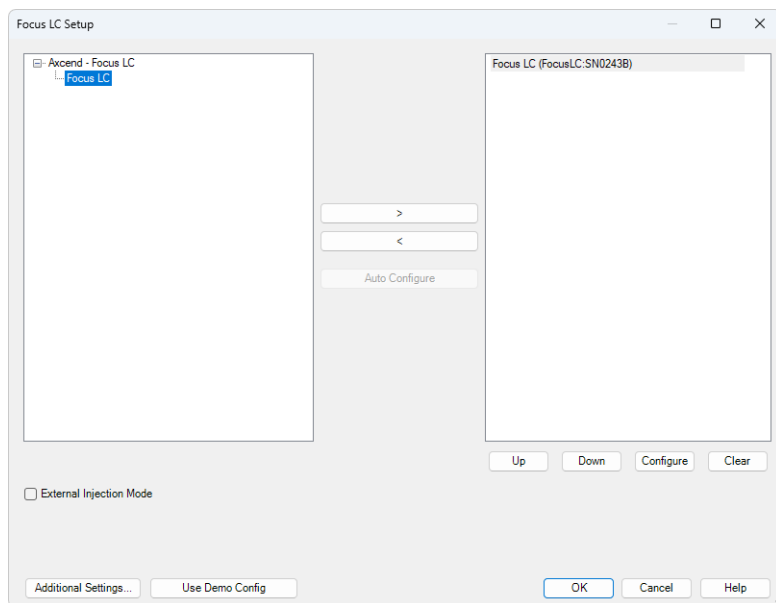


Fig. 5: ICF Setup for Focus LC

Note: Press the **F1** key to display the **ICF** help with detailed description of the dialog.

- **External Injection Mode** must only be enabled when using external autosampler. It means that **Clarity** will not continue with equilibration and injection, but waits for external trigger (from **Device Monitor** or external input).

Note: This setup is incompatible with a controlled autosampler, as only one autosampler can be assigned to an instrument. The external device triggering the run must thus operate in an uncontrolled mode and be synchronized with **Clarity** through a hardware cable.

- Click on the *Configure* button in the *ICF Setup* dialog and the *Configure Focus LC* dialog is displayed for entering the connection parameters.

Fig. 6: Configure Focus LC dialog

- Fill in the *IP address* and click *Load Configuration from Device* button to retrieve parameters from the device then click *OK* button.

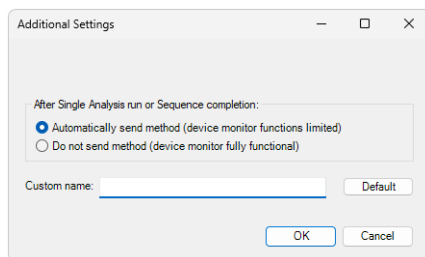
Note: Press the *F1* key to display the **Axcend Focus LC** help with detailed description of the dialog.

- The **Focus LC system** will appear in the *Setup Control Modules* list ④ of the *System Configuration* dialog.
- Change the *Instrument Type* ⑤ a on the desired *Instrument* tab ⑤ b to LC and drag the **Focus LC** item from the *Setup Control Modules* list on the left ④ to the *Instrument* tab on the right ⑥ , or use the [--->] button ⑦ .
- Set the *Ext. Start Dig. Input* ⑧ to "--" - [--->] ⑧ to assure correctly synchronized start of the analysis. This applies to both situations; with and without an external autosampler.

Note: The configuration dialog of the **Focus LC System** can be displayed any time by double-clicking on its icon or using the *Setup* button.

Additional Settings...

This dialog allows you to configure additional settings of the control module.



After Single Analysis run or Sequence completion

Choose how Clarity sends the method to the device:

- *Automatically send method* – Clarity sends the method after each single analysis run or after the sequence is finished automatically. *Device Monitor* functions after the method is sent may be limited in this mode. This mode is necessary if you want to run a continuous loop of Single Analysis measurements. It does not affect Sequence runs.
- *Do not send method* – The method is not sent automatically, allowing full access to *Device Monitor* functions even when method is sent to the device.

Custom name

Allows you to rename the module. The custom name will appear in the *System Configuration* dialog including the *Data Inputs & Outputs* section.

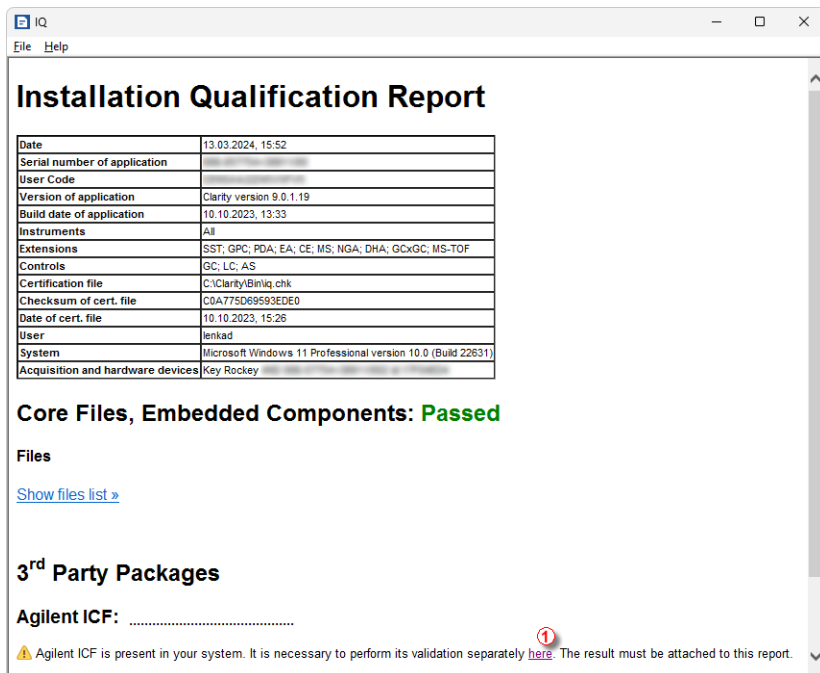
If left blank, the module will use its default name. Use the Default button to reset the name at any time.

3.4 Installation Qualification of Agilent ICF

Agilent ICF is an external program developed by Agilent and for that reason it must be validated using their utility. If you have installed Clarity with Agilent ICF, **the IQ is valid only if successful validation of ICF is attached.**

The validation of ICF can be performed directly from the *IQ Report*.

Caution: If Clarity expects ICF installation then **IQ** also. And if for some reason the ICF installation is not found, the *Installation Qualification Test* is automatically **FAILED**. To resolve this situation, it is necessary to re-install **Agilent ICF** during Clarity installation.



Click the link "here" ①, after that it is necessary to click *Run* in two pop-up windows. *Agilent Software Verification Tool* window will open. Select what report file type should be generated and define post-qualification actions. The *Reports folder* field shows the location where the reports will be saved (C:\SVReports\). The folder can be opened directly by clicking the *Open* in the *Agilent Software Verification Tool* window. Click *Qualify* ② to run the IQ.

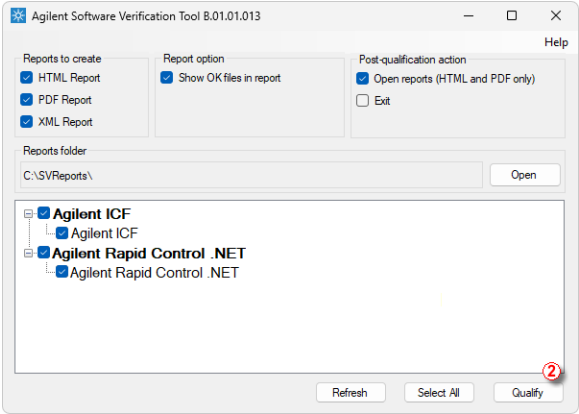


Fig. 7: Agilent Software Verification Tool

The HTML and PDF reports are opened automatically in the default browser/program if the *Open reports* option was enabled.

Software Verification Report

Date:29 September 2025Time:11:20:20 [UTC +02:00:00]Host Name:PC-073.dataapex.local

Windows User Name:evapBase Revision Number:3.4.49.0Product Name:Agilent ICF

Install Type:N/AAdditional Packages:[Details](#)

Base Reference File Name: IQTRef\ICF.xml

Summary:

Overall Evaluation of Installation CheckPASS

File Report Summary

Fig. 8: ICF Report - PASS

At the end of the generated report, a table of installed drivers and their versions is displayed.

Details

ID	Description
45	Shimadzu GC Driver 2.41
64	Shimadzu LC Driver Package 2.21
10015	Agilent Instrument Control Framework - ELSD Drivers Version 1.8 [61]
10024	CTC PAL3 ICF Driver 1.8.1.0
10028	Agilent Instrument Control Framework - GC Drivers 4.3 [235]
10033	Agilent Instrument Control Framework - Headspace Control 4.3 [117]
10511	Axceed Focus LC Driver 1.3.5.4
10538	Testa.Flowmeter.Driver for ICF 1.0.47.0
10540	Agilent Instrument Control Framework - LC Drivers 3.9.56

Fig. 9: ICF Report - Installed drivers table

The individual components can also be found in the component list if the *Show OK files in report* checkbox is selected in the *Agilent Software Verification Tool* window.

4 Using Axcend Focus LC

There are multiple places for setting the parameters of the **Axcend Focus LC** in the **Clarity**:

- the [Device Monitor](#)
- the [Method Setup](#)

Caution: Before opening the *Instrument* window with configured **ICF** devices, ensure there is not any other PC connected to the device. Otherwise error will occur during the connection.

4.1 Device Monitor

The *Device Monitor* window can be invoked by the *Analysis - Device Monitor* command from the *Instrument* window or using the **Device Monitor**  icon.

Clicking the ? button  will invoke the **Axcend Focus LC** help dialog.

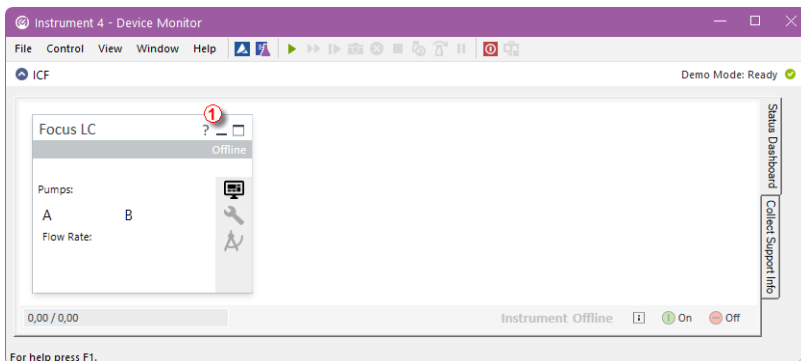


Fig. 10: Device Monitor

4.2 Method Setup - AS

The *Method Setup - AS* tab serves for setting of *Sample Port* for *Injector*. It is also possible to set *Multi Injection* mode here by checking the checkbox and setting *Injector 2 Sample Port*.

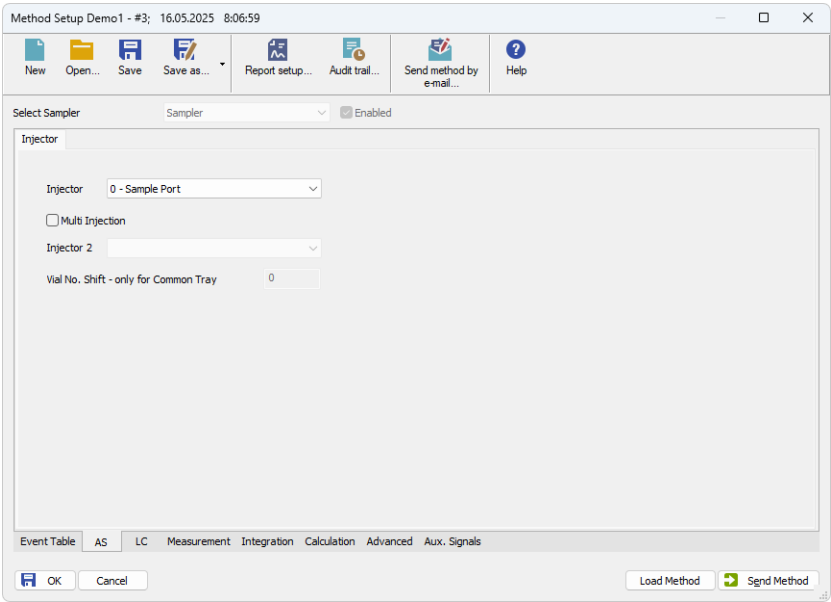


Fig. 11: Method Setup - AS

4.3 Method Setup - LC

The *Method Setup - LC* tab serves for setting of majority of the parameters for **Axceed Focus LC**, including flow, pressure, composition, and selecting detectors. Press *F1* key to display detailed help for **Axceed Focus LC**.

Method Setup Demo1 - #3; 30.05.2025 14:59:33

NewOpen...SaveSave as...Report setup...Audit trail...Send method by e-mail...Help

Select LCFocus LCEnabled

Settings

Control ModeFlow

Equilibration Time1,00 min

Operating Pressure2000,0 psi

Flow Rate1,000 µL/min

Solvent UsageA 14,13 µLB 11,88 µL

Mobile PhaseA B

Signals

☒ Store Detector 1 Signal (Not

☒ Store Detector 2 Signal (275

Oven Control

OnOff

Target t* 45 C*

Timed Injection

☐ Timed Injection

1,000 Minutes

Composition Timetable

Time (min)	Composition B (%)
0,00	5
3,00	95
3,20	95
3,30	5
3,50	5

AddDeleteClear

Event TableASLCLCMeasurementIntegrationCalculationAdvancedAux. Signals

OKCancelLoad MethodSend Method

Fig. 12: Method Setup - Acquisition

4.4 Method Setup - Aux. Signals

The *Method Setup - Aux. Signals* tab serves for setting the usage of auxiliary signals of the **Axcend Focus LC** device.

The list of available auxiliary signals is shown in the table. By checking the checkbox in the *Store* column for the particular row, the given auxiliary signal will be stored into the measured chromatogram.

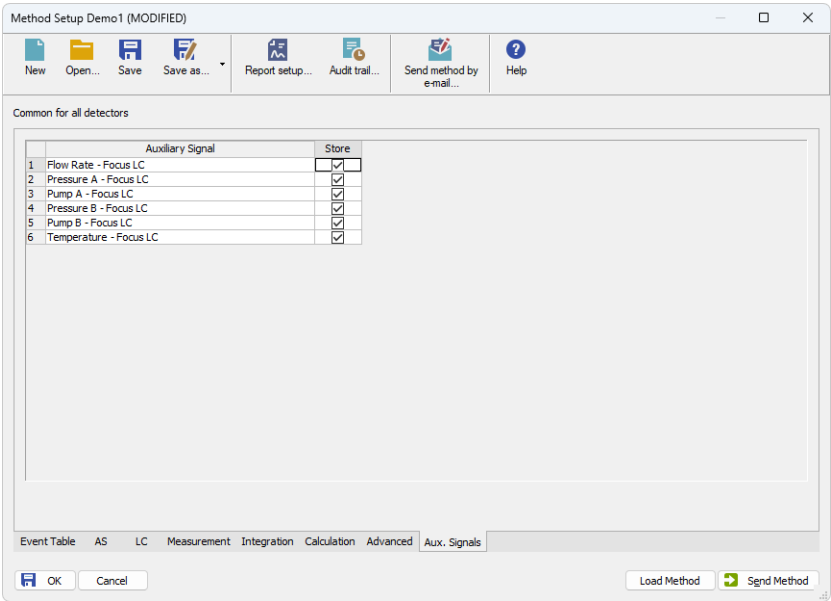


Fig. 13: Method Setup - Aux. Signals

5 Troubleshooting

When the remedy for some problem cannot be discovered easily, the recording of communication between **Clarity** and **Axcend Foxus LC System** control module can significantly help the **DataApex** support to discover the cause of the problem. The recordings can be found in C:\CLARITY\CFG\DEBUG_LOGS\PGMLOG.

In case you cannot establish communication with Agilent ICF controlled instruments, please review the following issues:

Check the network connection using the Ping command

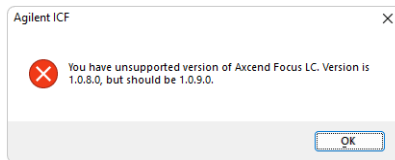
The problem in communication between **Clarity** and Axcend instrument may be caused by wrong network configuration, firewall preventing the connection, etc. Run the command line in Windows (for example by pressing the **Windows key** together with the **R** key, in the displayed *Run* window type *cmd* and press *Enter*).

In the command line type `ping <ip-adress-of-instrument>` or `<hostname>` and press *Enter*. The *IP Address (hostname)* is the same you entered in the ICF;Setup dialog.

5.1 Specific Problems

Clarity can't be run and it displays "Agilent ICF is not installed correctly." message.

Cause: The cause of the problem is that the Agilent ICF has a different version than expected by Clarity. It can typically happen when other software also using Agilent ICF decides to reinstall it. Thus next time Clarity expects different version than is installed.



Solution: Solution is to reinstall Agilent ICF and Axcend Focus LC during Clarity installation. Follow steps described in the chapter "**Installation procedure**" on pg. 3.